



## General

### Guideline Title

Vegetarian nutrition (VN) evidence based nutrition practice guideline.

### Bibliographic Source(s)

Academy of Nutrition and Dietetics. Vegetarian nutrition (VN) evidence based nutrition guideline. Chicago (IL): Academy of Nutrition and Dietetics; 2011 Sep. Various p.

### Guideline Status

This is the current release of the guideline.

## Recommendations

### Major Recommendations

Ratings for the strength of the recommendations (Strong, Fair, Weak, Consensus, Insufficient Evidence), conclusion grades (I-V), and statement labels (Conditional versus Imperative) are defined at the end of the "Major Recommendations" field.

#### Vegetarian Nutrition (VN): Assessing Food and Nutrient Intake of Child and Adolescent Vegetarians

##### VN: Assessing Micronutrient Intake of Adolescent Vegetarians

For adolescent vegetarians, the registered dietitian (RD) should assess micronutrient intake, particularly iron, zinc, vitamin C and vitamin B-12. Research from a limited number of Western countries indicates that adolescent vegetarians or semi-vegetarians (11 to 19 years) may have lower intake than national standards for micronutrients such as iron, zinc and vitamin C. In addition, two studies measuring methylmalonic acid (MMA) levels showed that lacto-ovo vegetarian/lacto-vegetarian (LOV/LV) or omnivorous adolescents (9 to 15 years) who had followed a very restrictive vegetarian diet (macrobiotic) early in life, may be at risk for vitamin B-12 deficiency (41% of adolescents had MMA >290nmol/L and 21% had MMA >410nmol/L).

Strong, Imperative

##### VN: Assessing Dietary Intake of Adolescent Vegetarians

For adolescent vegetarians, the RD should assess intake of foods rich in calcium (e.g., dairy products, kale, broccoli, fortified soy milk, etc.). Research indicates that although dietary patterns differ among countries, adolescent vegetarians (11 to 19 years) tended to consume fewer dairy products.

Strong, Imperative

## VN: Assessing Micronutrient Intake of Vegetarian Children

For vegetarian children, the RD should assess micronutrient intake, particularly vitamin B-12. Research studies measuring MMA levels indicate that small children (10 months to 11.7 years) of parents who follow a macrobiotic diet, had a high prevalence of vitamin B-12 deficiency (55% to 85%).

Weak, Imperative

## VN: Assessing Macronutrient Intake of Child and Adolescent Vegetarians

For child and adolescent vegetarians, the RD should assess intake of protein and essential fatty acids (EFA). While meeting protein requirements is typically not an issue with vegetarian diets, the RD can recommend that children and adolescents include complementary mixtures of plant proteins. This can be achieved by consuming a varied diet throughout the day. In addition, some research suggests that blood and tissue eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) levels may be sub-optimal among patients who follow a vegetarian dietary pattern.

Consensus, Imperative

### Recommendation Strength Rationale

- Conclusion statements are Grades II, III, and Consensus

## VN: Assessing Knowledge, Beliefs and Motivations of Adult, Child and Adolescent Vegetarians

### VN: Assessing Knowledge and Beliefs of Adult, Child and Adolescent Vegetarians

For adult, child and adolescent vegetarians, the RD should assess knowledge and beliefs about a vegetarian diet. Research indicates that vegetarian dietary patterns vary and fluctuate over time. Even within types of vegetarian diets, individuals may not always include a variety of healthful foods in their diet. Vegetarians who are on highly restrictive diets resulting from unhealthful food choices may be at nutritional risk. Specific nutrient considerations may need to be addressed in some vegetarian dietary patterns for optimal nutrition.

Strong, Imperative

### VN: Assessing Motivations That Influence Vegetarian Dietary Lifestyle for Adults and Children

For adult, child and adolescent vegetarians, the RD should assess reasons for following a vegetarian lifestyle. Research indicates that the motivations for being vegetarian (e.g., health, ethical, environmental, cultural or religious, etc.) influence dietary practices which may impact nutrient intake. Dietary patterns based on health beliefs may be more flexible than dietary patterns based on religious or moral convictions.

Strong, Imperative

### Recommendation Strength Rationale

- Conclusion statements are Grades I and II

## VN: Assessing for Signs of Disordered Eating Behaviors Among Adolescent and Young Adult Vegetarians

### VN: Assessing for Signs of Disordered Eating Behaviors Among Adolescent and Young Adult Vegetarians

In adolescent and young adult (19 to 30 years) vegetarians, the RD should assess for problem behaviors such as dieting. Research finds that a subset of vegetarian adolescents and young adults shows higher patterns of unhealthful dieting practices than omnivores or more health conscious vegetarians of the same age.

Fair, Imperative

### Recommendation Strength Rationale

- Conclusion statement is Grade II

## VN: Assessing Biochemical Data of Adult, Child and Adolescent Vegetarians

### VN: Assessing Biochemical Data of Adult, Child and Adolescent Vegetarians

For adult, child and adolescent vegetarians for whom dietary assessment reveals inadequate intake, the RD should assess the biochemical data,

medical tests and procedures including, but not limited to complete blood count (CBC), serum iron, ferritin, transferrin, vitamin B-12, zinc, vitamin D, and EFA. Research suggests that intake and/or bioavailability of these nutrients may be of special concern for vegetarian or vegan adults, adolescents and children. Assessment of these factors is needed to effectively determine nutrition diagnoses and plan the nutrition interventions. Inability to achieve optimal nutrient intake may contribute to poor outcomes.

Consensus, Imperative

VN: Assessing Vitamin B-12 Status of Adult, Child and Adolescent Vegetarians

For adult, child and adolescent vegetarians, the RD should assess for dietary adequacy of vitamin B-12 intake. If dietary intake of vitamin B-12 is inadequate, then the RD may recommend using MMA if available, as a functional indicator of deficiency. Two research studies measuring MMA levels showed that LOV/LV or omnivorous adolescents (9 to 15 years) who had followed a very restrictive vegetarian diet (macrobiotic) early in life, may be at risk for vitamin B-12 deficiency (41% of adolescents had MMA >290nmol/L and 21% had MMA >410nmol/L). In addition, research studies showed that the prevalence of vitamin B-12 deficiency among healthy, non-pregnant adult vegetarians ranged from 30% to 86%. When vegans and LOV/LV vegetarians were analyzed separately, vegans had even higher proportions of vitamin B-12 deficiency (43% to 88%). Among children (10 months to 11.7 years) and older adults (>55 years), the prevalence of vitamin B-12 deficiency was 55% to 85% and 46.9% to 68%, respectively.

Fair, Imperative

Recommendation Strength Rationale

- Conclusion statements are Grades I, III, and Consensus

VN: Assessing Food and Nutrient Intake of Adult Vegetarians

VN: Assessing Micronutrient Intake of Adult Vegetarians

For adult vegetarians, the RD should assess micronutrient intake, particularly vitamin B-12. Research studies measuring MMA levels showed that the prevalence of vitamin B-12 deficiency among healthy, non-pregnant adult vegetarians ranged from 30% to 86%. When vegans, LOV/LV were analyzed separately, vegans had even higher proportions of vitamin B-12 deficiency (43% to 88%). Among older adults (>55 years), the prevalence of vitamin B-12 deficiency was 46.9% to 68%.

Fair, Imperative

VN: Assessing Protein Intake of Adult Vegetarians

For adult vegetarians, the RD should assess intake of protein. While meeting protein requirements is typically not an issue with vegetarian diets, the RD can recommend that adults include complementary mixtures of plant proteins. This can be achieved by consuming a varied diet throughout the day.

Consensus, Imperative

VN: Assessing Essential Fatty Acid Intake of Adult Vegetarians

For adult vegetarians, the RD should assess dietary intake of EFA. Some research suggests that blood and tissue EPA and DHA levels may be sub-optimal among patients who follow a vegetarian dietary pattern.

Consensus, Imperative

Recommendation Strength Rationale

- Conclusion statements are Grades I, III, and Consensus

VN: Assessing Food and Nutrient Intake During Pregnancy for Adolescent and Adult Vegetarians

VN: Assessing Micronutrient Needs in Pregnant Adolescent and Adult Vegetarians

For pregnant adolescent and adult vegetarians, the RD should assess the patient's/client's intake of all micronutrients, particularly folate, vitamin B-12, iron, and zinc, to ensure the Dietary Reference Intakes (DRI) are met. Research indicates that pregnant vegetarians did not meet dietary requirements for at least one of these micronutrients. Two high quality studies report that pregnant vegetarians had significantly lower serum B-12 concentrations than pregnant non-vegetarians. In addition, research studies measuring MMA levels showed that the prevalence of vitamin B-12

deficiency among healthy, non-pregnant adult vegetarians ranged from 30% to 86%. When vegans and LOV/LV were analyzed separately, vegans had even higher proportions of vitamin B-12 deficiency (43% to 88%).

Strong, Conditional

VN: Assessing Macronutrient Needs in Pregnant Adolescent and Adult Vegetarians

For pregnant adolescent and adult vegetarians and vegans, the RD should assess for adequate protein from a variety of complementary mixtures of plant proteins consumed throughout the day, compared to the DRI in pregnancy. While research indicates that pregnant vegetarians typically had lower protein intake than pregnant omnivores, they met or exceeded the national standards for protein intake for pregnant women in the populations studied.

Strong, Imperative

VN: Assessing Essential Fatty Acid Intake of Pregnant Adolescent and Adult Vegetarians

For pregnant adolescent and adult vegetarians, the RD should assess dietary intake of EPA. Some research suggests that blood and tissue EPA and DHA levels may be sub-optimal among patients who follow a vegetarian dietary pattern.

Consensus, Imperative

Recommendation Strength Rationale

- Conclusion statements are Grades I, III, and Consensus

VN: Dietary and Micronutrient Intake of Vegetarian Children and Adolescents

VN: Micronutrient Intake of Adolescent Vegetarians

For adolescent vegetarians, the RD should specifically plan foods rich in micronutrients, such as iron, zinc, vitamin C and vitamin B-12, into the diet to meet the DRI. When appropriate, vitamin and/or mineral supplements may be indicated to prevent or resolve nutrient deficiency. Research from a limited number of Western countries showed that adolescent vegetarians or semi-vegetarians (11 to 19 years) may have lower intake than national standards for micronutrients such as iron, zinc and vitamin C. In addition, two studies measuring MMA levels showed that LOV/LV or omnivorous adolescents (9 to 15 years) who had followed a very restrictive vegetarian diet (macrobiotic) early in life may be at risk for vitamin B-12 deficiency (41% of adolescents had MMA >290nmol/L and 21% had MMA >410nmol/L). Fair, Imperative

Fair, Imperative

VN: Dietary Intake of Adolescent Vegetarians

For adolescent vegetarians, the RD should recommend a meal plan that incorporates foods rich in calcium (e.g., dairy products, kale, broccoli, fortified soy milk, etc.) or if appropriate, calcium supplements. Research indicates that although dietary patterns differ, adolescent vegetarians (11 to 19 years) tended to consume fewer dairy products.

Strong, Imperative

VN: Micronutrient Intake of Vegetarian Children

For vegetarian children, the RD should design a nutrition prescription to ensure the DRI for all micronutrients, particularly vitamin B-12, are met. If appropriate, vitamin and/or mineral supplements may be needed to prevent or resolve nutrient deficiency. Research studies measuring MMA levels indicate that small children (10 months to 11.7 years) of parents who follow a macrobiotic diet had a high prevalence of vitamin B-12 deficiency (55% to 85%).

Weak, Imperative

Recommendation Strength Rationale

- Conclusion statements are Grades II and III

VN: Diet Diversity and Vegetarian Diets for Children, Adolescents and Adults

VN: Diet Diversity of Vegetarian Diets for Children, Adolescents and Adults

If the adult, child or adolescent patient or client is on a highly restrictive vegetarian diet with a narrow range of food choices, then the RD should educate them on the importance of including a variety of foods within their diet to meet their nutritional needs. When appropriate, vitamin and/or mineral supplements may be indicated. Research shows that vegetarian dietary patterns vary and fluctuate over time. Even within types of vegetarian diets, individuals vary in the extent to which they include a variety of plant-based foods. Vegetarians who are on highly restrictive diets resulting from unhealthful food choices may be at nutritional risk.

Strong, Conditional

Recommendation Strength Rationale

- Conclusion statements are Grades I and II

#### VN: Macronutrient Intake of Adult, Child and Adolescent Vegetarians

##### VN Protein Intake of Adult, Child and Adolescent Vegetarians

For adult, child and adolescent vegetarians, the RD should develop a nutrition prescription providing adequate protein, and offer comprehensive nutrition education and skill development on planning a diet which provides a variety of protein foods. While meeting protein requirements is typically not an issue with vegetarian diets, the RD can recommend including complementary mixtures of plant proteins. This can be achieved by consuming a varied diet throughout the day.

Consensus, Imperative

##### VN: Essential Fatty Acid Intake of Adult, Child and Adolescent Vegetarians

In the adult, child or adolescent vegetarian, if nutrition assessment of intake or blood levels of EPA and DHA reveals a potential deficiency or lower than optimal levels, the RD should counsel the patient or client to increase EPA and DHA levels by any of the following methods (as appropriate based on RD clinical judgment):

- Increasing intake of foods rich in EPA and DHA
- EPA and DHA supplementation
- Increase endogenous synthesis of EPA by decreasing intake of omega-6 fatty acid as well as reducing the amount of saturated fat and trans fat in the diet

Consensus, Conditional

Recommendation Strength Rationale

- Conclusion statements are based on Consensus

#### VN: Micronutrient Intake of Adult Vegetarians

##### VN: Micronutrient Intake of Adult Vegetarians

For adult vegetarian patients or clients, the RD should design a nutrition prescription to ensure the DRI for all micronutrients, particularly vitamin B-12, are met. When appropriate, vitamin and/or mineral supplements may be indicated to prevent or resolve nutrient deficiency. Research studies measuring MMA levels showed that the prevalence of B-12 deficiency among healthy, non-pregnant adult vegetarians ranged from 30% to 86%. When vegans and LOV/LV were analyzed separately, vegans had even higher proportions of vitamin B-12 deficiency (43% to 88%). Among older adults (>55 years), the prevalence of vitamin B-12 deficiency was 46.9% to 68%.

Fair, Imperative

Recommendation Strength Rationale

- Conclusion statements are Grades I and III

#### VN: Nutrition Counseling to Support a Therapeutic Vegetarian Diet for Adults

##### VN: Nutrition Counseling to Support Therapeutic Vegetarian Diets for Adults

If a vegetarian diet is proposed as a therapeutic diet according to stage in the life cycle and disease state for adults, the RD should employ a variety of counseling approaches and strategies to promote adherence to the diet. Research shows that intensive support (e.g., frequent encounters,

cooking demonstration, incentives, etc.) can improve nutrition-related outcomes when using a vegetarian diet therapeutically and nutrition counseling strategies such as motivational interviewing can improve adherence to recommendations and diet-related outcomes.

Strong, Conditional

Recommendation Strength Rationale

- Conclusion statements are Grades I, II, and III

#### VN: Macronutrient Intake of Adolescent and Adult Vegetarians During Pregnancy

VN: Protein Intake of Pregnant Adolescent and Adult Vegetarians

For pregnant adult and adolescent vegetarians and vegans, the RD should develop a nutrition prescription and offer comprehensive nutrition education and skill development on planning a diet which provides adequate protein from a variety of complementary mixtures of plant proteins consumed throughout the day. While research indicates that pregnant vegetarians typically had lower protein intake than pregnant omnivores, they met or exceeded the national standards for protein intake for pregnant women in the populations studied.

Weak, Imperative

VN: Essential Fatty Acid Intake of Pregnant Adolescent and Adult Vegetarians

For the pregnant adolescent or adult vegetarian, if nutrition assessment of intake or blood levels of EPA and DHA reveals a potential deficiency or lower than optimal levels, the RD should counsel the patient or client to increase EPA and DHA levels by any of the following methods (as appropriate based on RD clinical judgment):

- Increasing intake of foods rich in EPA and DHA
- EPA and DHA supplementation
- Increase endogenous synthesis of essential fatty acids (EFA) by decreasing intake of omega-6 fatty acid as well as reducing the amount of saturated fat and trans fat in the diet

Consensus, Conditional

Recommendation Strength Rationale

- Conclusion statements are Grade III and Consensus

#### VN: Micronutrient Intake in Adolescent and Adult Vegetarians During Pregnancy

VN: Micronutrient Intake in Pregnant Adolescent and Adult Vegetarians

For pregnant adolescent and adult vegetarians, the RD should design a nutrition prescription to ensure the DRI for all micronutrients are met. If unable to meet the DRI for recommended levels of micronutrients, particularly iron, folate and zinc, the RD should recommend supplementation to ensure adequate intake. Research indicates that pregnant vegetarians did not meet dietary requirements for at least one of these micronutrients.

Fair, Conditional

VN: Vitamin B-12 Intake in Pregnant Adolescent and Adult Vegetarians

For pregnant adolescent and adult vegetarian or vegan patients or clients, the RD should design a nutrition prescription to ensure vitamin B-12 requirements are met by diet and/or supplementation, including prenatal supplements. Two high quality studies report that lacto-ovo vegetarian pregnant women are less likely than non-vegetarian pregnant women to meet dietary requirements for vitamin B-12 intake, and two high quality studies report that pregnant vegetarians had significantly lower serum B-12 concentrations than pregnant non-vegetarians. In addition, twelve studies measuring MMA levels showed that the prevalence of vitamin B-12 deficiency among healthy, non-pregnant adult vegetarians ranged from 30% to 86%. When vegans and LOV/LV were analyzed separately, vegans had even higher proportions of vitamin B-12 deficiency (43% to 88%).

Fair, Imperative

Recommendation Strength Rationale

- Conclusion statements are Grades I and III

## VN: Hyperlipidemia Treatment with a Vegetarian Diet for Adults

### VN: Treating Hyperlipidemia with a Vegetarian Diet for Adults

If consistent with patient or client preference, the RD may recommend and educate on the benefits of a vegetarian diet for adults seeking treatment to lower total cholesterol (TC) and low-density lipoprotein-cholesterol (LDL-C) levels, or if appropriate, to reduce weight. Research shows that various types of vegetarian diets (e.g., vegetarian Ornish, Portfolio diet, ovo-lacto vegetarian and vegan) lower TC from 7.2% to 26.6% and lower LDL-C from 8.7% to 35% (with five of the eight studies that provided comparison data showing a decrease between 10% and 20% for both TC and LDL-C). Vegan diets lower both TC and LDL-C more than other types of vegetarian diets.

Strong, Conditional

#### Recommendation Strength Rationale

- Conclusion statement is Grade I

## VN: Overweight and Obesity Treatment with a Vegetarian Diet for Adults

### VN: Treating Overweight and Obesity with a Vegetarian Diet for Adults

If consistent with patient or client preference, the RD may recommend and educate on the benefits of the therapeutic use of a vegetarian diet for adults seeking treatment for overweight or obesity. Research indicates that the therapeutic use of a vegetarian diet is effective for treating overweight and obesity in both the short term (less than one year) and longer term (greater than one year), and may perform better than alternative omnivorous diets for the same purpose. Percent weight loss ranged from 3.2% to 9.3% at 12 months across studies.

Strong, Conditional

#### Recommendation Strength Rationale

- Conclusion statements are Grades I and III

## VN: Type 2 Diabetes Treatment with a Vegetarian Diet for Adults

### VN: Treating Type 2 Diabetes with a Vegetarian Diet for Adults

If consistent with patient or client preference, the RD may recommend and educate on the benefits of the therapeutic use of a vegetarian diet for adults seeking treatment for type 2 diabetes. Research indicates that a vegetarian diet may decrease or maintain blood glucose levels; a vegan diet may decrease hemoglobin A1c (A1c) as well as, or better than, an omnivorous diet. Additionally, a vegetarian diet may reduce diabetes-related co-morbidities (e.g., cardiovascular disease, obesity, and hypertension).

Fair, Conditional

#### Recommendation Strength Rationale

- Conclusion statements are Grades II and III

## VN: Monitoring Adherence to Vegetarian Diet Prescriptions for Adults

### VN: Adherence to a Vegetarian Therapeutic Diet for Adults

For adult patients or clients, the RD should monitor and evaluate adherence to a therapeutic vegetarian diet. Research indicates that these diets appear to perform as well and possibly better than omnivorous diets in terms of attrition rate, provided that patients receive nutrition education and appropriate dietary support. Many factors may influence the adherence to a diet, such as disease state, length of intervention, restrictiveness, and patient support.

Strong, Imperative

### VN: Adherence to Vegetarian Diets for Treatment of Obesity and Overweight for Adults

For adult patients or clients seeking treatment for overweight or obesity with a vegetarian diet, the RD should monitor and evaluate adherence and provide continued nutrition education support. Research shows lower compliance rates for weight loss patients versus patients treated for other disease states.

## Strong, Imperative

### Recommendation Strength Rationale

- Conclusion statement is Grade I

### Definitions:

#### Conditional versus Imperative Recommendations

Recommendations can be worded as conditional or imperative statements. Conditional statements clearly define a specific situation, while imperative statements are broadly applicable to the target population without restraints on their pertinence. More specifically, a conditional recommendation can be stated in if/then terminology (e.g., if an individual does not eat food sources of omega-3 fatty acids, then 1 g of EPA and DHA omega-3 fatty acid supplements may be recommended for secondary prevention).

In contrast, imperative recommendations "require," or "must," or "should achieve certain goals," but do not contain conditional text that would limit their applicability to specified circumstances (e.g., portion control should be included as part of a comprehensive weight management program. Portion control at meals and snacks results in reduced energy intake and weight loss).

#### Conclusion Grading Table

Strength of Evidence Elements	Grade I Good/Strong	Grade II Fair	Grade III Limited/Weak	Grade IV Expert Opinion Only	Grade V Grade Not Assignable
<b>Quality</b> <ul style="list-style-type: none"> <li>• Scientific rigor/validity</li> <li>• Considers design and execution</li> </ul>	Studies of strong design for question  Free from design flaws, bias and execution problems	Studies of strong design for question with minor methodological concerns  OR  Only studies of weaker study design for question	Studies of weak design for answering the question  OR  Inconclusive findings due to design flaws, bias or execution problems	No studies available  Conclusion based on usual practice, expert consensus, clinical experience, opinion, or extrapolation from basic research	No evidence that pertains to question being addressed
<b>Consistency</b>  Of findings across studies	Findings generally consistent in direction and size of effect or degree of association, and statistical significance with minor exceptions at most	Inconsistency among results of studies with strong design  OR  Consistency with minor exceptions across studies of weaker designs	Unexplained inconsistency among results from different studies  OR  Single study unconfirmed by other studies	Conclusion supported solely by statements of informed nutrition or medical commentators	NA
<b>Quantity</b> <ul style="list-style-type: none"> <li>• Number of studies</li> </ul>	One to several good quality studies  Large number of subjects	Several studies by independent investigators	Limited number of studies  Low number of subjects	Unsubstantiated by published studies	Relevant studies have not been done



Strength of Evidence Elements	Number of subjects in studies	studied Grade I Good/Strong Studies with negative results having sufficiently large sample size for adequate statistical power	Grade II Fair Doubts about adequacy of sample size to avoid Type I and Type II error	studied and/or Grade III Limited/Weak inadequate sample size within studies	Grade IV Expert Opinion Only	Grade V Not Assignable
Clinical Impact	<ul style="list-style-type: none"> <li>Importance of studied outcomes</li> <li>Magnitude of effect</li> </ul>	<p>Studied outcome relates directly to the question</p> <p>Size of effect is clinically meaningful</p> <p>Significant (statistical) difference is large</p>	Some doubt about the statistical or clinical significance of effect	<p>Studied outcome is an intermediate outcome or surrogate for the true outcome of interest</p> <p>OR</p> <p>Size of effect is small or lacks statistical and/or clinical significance</p>	Objective data unavailable	Indicates area for future research
Generalizability	To population of interest	Studied population, intervention and outcomes are free from serious doubts about generalizability	Minor doubts about generalizability	Serious doubts about generalizability due to narrow or different study population, intervention or outcomes studied	Generalizability limited to scope of experience	NA

This grading system was based on the grading system from Greer, Mosser, Logan, & Wagstrom Halaas. A practical approach to evidence grading. Jt Comm J Qual Improv. 2000;26:700-712. <http://www.adaevidencelibrary.com/topic.cfm?cat=1330>. In September 2004, The ADA Research Committee modified the grading system to this current version.

#### Criteria for Recommendation Rating

Statement Rating	Definition	Implication for Practice
Strong	A Strong recommendation means that the workgroup believes that the benefits of the recommended approach clearly exceed the harms (or that the harms clearly exceed the benefits in the case of a strong negative recommendation), and that the quality of the supporting evidence is excellent/good (grade I or II).* In some clearly identified circumstances, strong recommendations may be made based on lesser evidence when high-quality evidence is impossible to obtain and the anticipated benefits strongly outweigh the harms.	Practitioners should follow a Strong recommendation unless a clear and compelling rationale for an alternative approach is present.
Fair	A Fair recommendation means that the workgroup believes that the benefits exceed the harms (or that the harms clearly exceed the benefits in the case of a negative recommendation), but the quality of evidence is not as strong (grade II or III).* In some clearly identified circumstances, recommendations may be made based on lesser evidence when high-quality evidence is impossible to obtain and the anticipated benefits outweigh the harms.	Practitioners should generally follow a Fair recommendation but remain alert to new information and be sensitive to patient preferences.
Weak	A Weak recommendation means that the quality of evidence that exists is suspect or that well-done studies (grade I, II, or III)* show little clear advantage to one approach versus another.	Practitioners should be cautious in deciding whether to follow a recommendation classified as Weak, and should exercise judgment and be alert to emerging publications that report evidence. Patient preference should have a substantial influencing role.

Consensus Statement Rating	Definition	Implication for Practice
	A Consensus recommendation means that Expert opinion (grade IV) supports the guideline recommendation even though the available scientific evidence did not present consistent results, or controlled trials were lacking.	Practitioners should be flexible in deciding whether to follow a recommendation classified as Consensus, although they may set boundaries on alternatives. Patient preference should have a substantial influencing role.
Insufficient Evidence	An Insufficient Evidence recommendation means that there is both a lack of pertinent evidence (grade V)* and/or an unclear balance between benefits and harms.	Practitioners should feel little constraint in deciding whether to follow a recommendation labeled as Insufficient Evidence and should exercise judgment and be alert to emerging publications that report evidence that clarifies the balance of benefit versus harm. Patient preference should have a substantial influencing role.

\*Conclusion statements are assigned a grade based on the strength of the evidence. Grade I is good; grade II, fair; grade III, limited; grade IV signifies expert opinion only and grade V indicates that a grade is not assignable because there is no evidence to support or refute the conclusion. The evidence and these grades are considered when assigning a rating (Strong, Fair, Weak, Consensus, Insufficient Evidence - see chart above) to a recommendation.

Adapted by the Academy of Nutrition and Dietetics (AND) from the American Academy of Pediatrics, Classifying Recommendations for Clinical Practice Guideline, Pediatrics. 2004;114;874-877. Revised by the AND Evidence-Based Practice Committee, Feb 2006.

## Clinical Algorithm(s)

The following algorithms are provided in the original guideline document:

- Vegetarian Nutrition (VN) Algorithm
- VN Nutrition Assessment
- VN Nutrition Diagnosis
- VN Nutrition Intervention
- VN Monitoring and Evaluation

## Scope

### Disease/Condition(s)

- Vegetarian lifestyle
- Hyperlipidemia
- Overweight or obesity
- Type 2 diabetes
- Disordered eating behavior
- Pregnancy

### Guideline Category

Counseling

Evaluation

Management

Prevention

Treatment

## Clinical Specialty

Cardiology

Endocrinology

Family Practice

Internal Medicine

Nutrition

Obstetrics and Gynecology

Pediatrics

Preventive Medicine

## Intended Users

Advanced Practice Nurses

Dietitians

Health Care Providers

Nurses

Physician Assistants

Physicians

Students

## Guideline Objective(s)

Overall Objective

To provide medical nutrition therapy (MNT) guidelines for individuals who follow or are interested in following a vegetarian dietary lifestyle.

Specific Objectives

- To define evidence-based vegetarian nutrition recommendations for registered dietitians (RDs) that are carried out in collaboration with other healthcare providers
- To guide practice decisions that integrate medical, nutritional and behavioral strategies into the overall medical management of people choosing or interested in a vegetarian dietary pattern
- To reduce variations in practice among RDs
- To provide RDs with data and insight to make recommendations to adjust MNT or recommend other therapies and strategies to achieve desired outcomes for treatment or prevention of disease
- To enable RDs to help individuals identify dietary choices that not only support their clients' moral, ethical or religious views, but promote optimal health as well
- To provide evidence-based findings to aid RDs in the design of healthy flesh-free and animal-free diets that meet the needs and interests of a broad range of individuals
- To provide resources, derived from a systematic review of research, for RDs to enable their clients to make healthful vegetarian dietary choices
- To promote self-management strategies that empower the patient to take responsibility for day-to-day management and provide RDs with

data to make recommendations to adjust MNT or to recommend other therapies to achieve clinical outcomes

- To enhance the quality of life for individual vegetarians, utilizing customized strategies based on the individual's preferences, lifestyle and goals
- To develop content for interventions that can be tested on clinical outcomes
- To define the highest quality of care within cost constraints of the current healthcare environment

## Target Population

Children (2 to 12 years), adolescents (13 to 18 years), and adults (including pregnant adults and adolescents) who follow or are interested in following a vegetarian dietary pattern

## Interventions and Practices Considered

### Evaluation (Nutrition Assessment)

1. Nutrition assessment including macronutrient (particularly protein) intake; micronutrient intake (particularly folate, vitamin B-12, iron, and zinc); essential fatty acid intake
2. Assessment of knowledge, beliefs, and motivations about a vegetarian diet and signs of disordered eating behavior
3. Biochemical data and relevant laboratory values, including complete blood count (CBC), serum iron, ferritin, transferrin, vitamin B-12 (methylmalonic acid levels), zinc, vitamin D, and essential fatty acids (EFA)

### Management/Treatment (Nutrition Interventions)

1. Treating hyperlipidemia, overweight/obesity, or type 2 diabetes with a vegetarian diet
2. Nutrition prescription to ensure the Dietary Reference Intakes (DRI) for all micronutrients are met
3. Nutrition prescription to ensure vitamin B-12 requirements are met by diet and/or supplementation, including prenatal supplements
4. Nutrition counseling to support therapeutic vegetarian diet
5. Education on diet diversity and, when appropriate, vitamin and mineral supplements
6. Nutrition prescription for protein intake from a variety of plant sources
7. Counseling on increasing eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) intake if EFA levels are low or sub-optimal
8. Monitoring for adherence to therapeutic diet

## Major Outcomes Considered

- Micronutrient, protein, and fatty acid needs in vegetarians
- Effectiveness of vegetarian diet in treating obesity, hyperlipidemia, and type 2 diabetes

## Methodology

### Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Searches of Electronic Databases

### Description of Methods Used to Collect/Select the Evidence

#### General Methods for Collecting/Selecting the Evidence

The following list provides an overview of the steps which the Academy evidence analysis team goes through to identify research through database searches.

1. Plan the search strategy to identify the "current best evidence" relevant to the question. The plan for identification and inclusion of articles and reports should be systematic and reproducible, not haphazard. Write out the original search strategy and document adjustments to the strategy if they occur. Allow for several iterations of searches.
2. List inclusion and exclusion criteria. The work group will define the inclusion and exclusion criteria. These criteria will be used in defining the search strategy and for filtering the identified research reports. The Academy uses only peer-reviewed research; that is, articles accepted for evidence analysis must be peer-reviewed and published in a peer-reviewed publication. Additionally, the Academy only uses human subjects in its research and does not include animal studies in its evidence analysis.
3. Identify search words. During the process of considering outcomes, interventions, nutrition diagnoses, and assessments, the work group may have identified a number of specific terms or factors that were important, but were not included in the actual question. These terms can be used as additional search terms to help identify relevant pieces of research. Both text word search and keyword search using Medical Subject Headings (MeSH) definitions may be used.
4. Identify databases to search. PubMed, Medline, CINAHL, EMBASE, Cochrane, Agricola, DARE, TRIP, AHRQ and ERIC are some common databases for clinical nutritional research. Note that search terms can vary depending on the database.
5. Conduct the search. Depending on the number and type of sources found in the initial search, adjustments might have to be made in the search strategy and to inclusion/exclusion criteria, and additional searches run. Changes to the search plan should be recorded for future reference. Document the number of sources identified in each search.
6. Review titles and abstracts. At this point, a filtering procedure is used to determine whether a research article matches the inclusion criteria and is relevant to the work group's questions. Typically, the lead analyst, along with a member of the expert workgroup, first reviews the citations and abstracts to filter out reports that are not applicable to the question. If a determination cannot be made based on the citation and abstract, then the full text of the article is obtained for review.
7. Gather all remaining articles and reports. Obtain paper or electronic copies of research articles that remain on the list following the citation and abstract review. If there are less than six citations, it could mean that the search was too specific to identify relevant research or that research has not been done on this topic. A broadened search should be tried. When there is a long list of citations, ascertain whether it includes articles that are tangential to the question or address the question in only a general way. In this case a more focused search strategy may be necessary.

#### Specific Methods for This Guideline

The recommendations in the guideline were based on a systematic review of the literature. Searches of PubMed, EBSCO host: Academic Search Premier, and CENTRAL databases and Agency for Healthcare Research and Quality (AHRQ) Evidence Reports and hand searches of other relevant literature were performed on the following topics:

- Types and diversity of vegetarian diets
- Vegetarian nutrition and nutrients
  - Vegetarian nutrition and micronutrients
  - Vegetarian nutrition and macronutrients
- Vegetarian nutrition in the lifecycle
  - Vegetarian nutrition in childhood and adolescence
  - Vegetarian nutrition in pregnancy
- Vegetarian nutrition and chronic diseases
  - Vegetarian nutrition and cardiovascular disease
  - Vegetarian nutrition and obesity
  - Vegetarian nutrition and type 2 diabetes
- Therapeutic diets and attrition

Each evidence analysis topic has a link to supporting evidence in the original guideline, where the Search Plan and Results can be found. Here the reader can view when the search plan was performed, specific inclusion and exclusion criteria, search terms, data bases that were searched, and the excluded articles.

## Number of Source Documents

Not stated

## Methods Used to Assess the Quality and Strength of the Evidence

## Rating Scheme for the Strength of the Evidence

Conclusion Grading Table

Strength of Evidence Elements	Grade I Good/Strong	Grade II Fair	Grade III Limited/Weak	Grade IV Expert Opinion Only	Grade V Grade Not Assignable
Quality <ul style="list-style-type: none"> <li>Scientific rigor/validity</li> <li>Considers design and execution</li> </ul>	Studies of strong design for question  Free from design flaws, bias and execution problems	Studies of strong design for question with minor methodological concerns  OR  Only studies of weaker study design for question	Studies of weak design for answering the question  OR  Inconclusive findings due to design flaws, bias or execution problems	No studies available  Conclusion based on usual practice, expert consensus, clinical experience, opinion, or extrapolation from basic research	No evidence that pertains to question being addressed
Consistency  Of findings across studies	Findings generally consistent in direction and size of effect or degree of association, and statistical significance with minor exceptions at most	Inconsistency among results of studies with strong design  OR  Consistency with minor exceptions across studies of weaker designs	Unexplained inconsistency among results from different studies  OR  Single study unconfirmed by other studies	Conclusion supported solely by statements of informed nutrition or medical commentators	NA
Quantity <ul style="list-style-type: none"> <li>Number of studies</li> <li>Number of subjects in studies</li> </ul>	One to several good quality studies  Large number of subjects studied  Studies with negative results having sufficiently large sample size for adequate statistical power	Several studies by independent investigators  Doubts about adequacy of sample size to avoid Type I and Type II error	Limited number of studies  Low number of subjects studied and/or inadequate sample size within studies	Unsubstantiated by published studies	Relevant studies have not been done
Clinical Impact <ul style="list-style-type: none"> <li>Importance of studied outcomes</li> </ul>	Studied outcome relates directly to the question  Size of effect is clinically	Some doubt about the statistical or clinical	Studied outcome is an intermediate outcome or surrogate for the true outcome of interest	Objective data unavailable	Indicates area for future research

Strength of Evidence	Magnitude of effect Grade I Good/Strong Significant (statistical) difference is large	Significance of effect Grade II Fair	Grade III OR Limited/Weak Size of effect is small or lacks statistical and/or clinical significance	Grade IV Expert Opinion Only	Grade V Grade Not Assignable
Generalizability  To population of interest	Studied population, intervention and outcomes are free from serious doubts about generalizability	Minor doubts about generalizability	Serious doubts about generalizability due to narrow or different study population, intervention or outcomes studied	Generalizability limited to scope of experience	NA

This grading system was based on the grading system from Greer, Mosser, Logan, & Wagstrom Halaas. A practical approach to evidence grading. Jt Comm J Qual Improv. 2000;26:700-712. <http://www.adaevidencelibrary.com/topic.cfm?cat=1330>. In September 2004, The ADA Research Committee modified the grading system to this current version.

## Methods Used to Analyze the Evidence

### Systematic Review with Evidence Tables

## Description of the Methods Used to Analyze the Evidence

### Step 1: Formulate Evidence Analysis Question

Specify a question in a defined area of practice; or state a tentative conclusion or recommendation that is being considered. Include the patient type and special needs of the target population involved, the alternatives under consideration, and the outcomes of interest (PICO format).

### Step 2: Gather and Classify Evidence

Conduct a systematic search of the literature to find evidence related to the question, gather studies and reports, and classify them by type of evidence. Classes differentiate primary reports of new data according to study design, and distinguish them from secondary reports that include systematic and/or narrative review.

### Step 3: Critically Appraise Each Article

Review each article for relevance to the question and use the checklist of questions to evaluate the research design and implementation. Abstract key information from the report.

### Step 4: Summarize Evidence

Synthesize the reports into an overview table and summarize the research relevant to the question.

### Step 5: Write and Grade the Conclusion Statement

Develop a concise conclusion statement (the answer to the question). Assign a grade to indicate the overall strength or weakness of evidence informing the conclusion statement (see the "Rating Scheme for the Strength of the Evidence" field).

## Methods Used to Formulate the Recommendations

### Expert Consensus

## Description of Methods Used to Formulate the Recommendations

## Moving from Analysis to the Evidence-Based Nutrition Practice Guideline

The expert workgroup, which includes practitioners and researchers with a depth of experience in the specific field of interest, develops the disease-specific guideline. The guideline development involves the following steps.

### Review the Conclusion Statements

The workgroup meets to review the materials resulting from the evidence analysis, which may include review of the conclusion statements, evidence summaries and evidence worksheets.

### Formulate Recommendations for the Guideline Integrating Conclusions from Evidence Analysis

The workgroup uses an expert consensus method to formulate the guideline recommendations and complete the various sections on the recommendation page. These include:

- **Recommendation(s):** This is a course of action for the practitioner. The recommendation is written using two brief and separate statements. The first statement is "what" the dietitian should do or not do? The second statement describes the "why" of the recommendation. More than one recommendation may be formulated depending on a particular topic and the supporting conclusion statements.
- **Rating:** The rating for the recommendation is based on the strength of the supporting evidence. The grade of the supporting conclusion statement(s) will be help determining this rating (see the "Rating Scheme for the Strength of the Recommendations" field).
- **Label of Conditional or Imperative:** Each recommendation will have a label of "conditional" or "imperative". Conditional statements clearly define a specific situation, while imperative statements are broadly applicable to the target population without restraints on their pertinence.
- **Risks and Harms of Implementing the Recommendation:** Includes any potential risks, anticipated harms or adverse consequences associated with applying the recommendation(s) to the target population.
- **Conditions of Application:** Includes any organizational barriers or changes that would need to be made within an organization to apply the recommendation in daily practice. Also includes any conditions which may limit the application of the recommendation(s). For instance, application may be limited to only people in an inpatient setting, or not applicable for pregnant women. Conditional recommendations will always have conditions specified. Imperative recommendations may have some general conditions for application.
- **Potential Costs Associated with Application:** Includes any costs that may be associated with the application of this recommendation such as specialized staff, new equipment or treatments.
- **Recommendation Narrative:** Provides a brief description of the evidence that supports this recommendation.
- **Recommendation Strength Rationale:** Provides a brief list of the evidence strength and methodological issues that determined the recommendation strength.
- **Minority Opinions:** If the expert work group cannot reach consensus on the recommendation, the minority opinions may be listed here.
- **Supporting Evidence:** Provides links to the conclusions statements, evidence summaries and worksheets related to the formulation of this recommendation(s).

### References Not Graded in the Academy's Evidence Analysis Process

Recommendations are based on the summarized evidence from the analysis. Sources that are not analyzed during the evidence analysis process may be used to support and formulate the recommendation or to support information under other categories on the recommendation page, if the workgroup deems necessary. References must be credible resources (e.g., consensus reports, other guidelines, position papers, standards of practice, articles from peer-reviewed journals, nationally recognized documents or websites). If recommendations are based solely on these types of references, they will be rated as "consensus."

Occasionally recommendations will include references that were not reviewed during the evidence analysis process but are relevant to the recommendation, risks and harms of implementing the recommendation, conditions of application, or potential costs associated with application. These references will be listed on the recommendation page under "References Not Graded in the Academy's Evidence Analysis Process."

### Develop a Clinical Algorithm for the Guideline

The workgroup develops a clinical algorithm based on Academy's Nutrition Care Process, to display how each recommendation can be used within the treatment process and how they relate to the Nutrition Assessment, Diagnosis, Intervention and Monitoring and Evaluation.

### Complete the Writing of the Guideline

Each disease-specific guideline has a similar format which incorporates the Introduction (includes: Scope of the Guideline, Statement of Intent, Guideline Methods, Implementation, Benefits and Risks/Harms of Implementation), Background Information and any necessary Appendices. The workgroup develops these features.



## Criteria Used in Guideline Development

The criteria used in determining the format and process for development of the Academy's guidelines is based on the following tools and criteria for evidence-based guidelines:

- Guideline Elements Model (GEM) which has been incorporated by the American Society for Testing and Materials (ASTM) as a Standard Specification for clinical practice guidelines.
- AGREE (Appraisal for Guidelines Research and Evaluation) Instrument
- National Guideline Clearinghouse [www.guideline.gov](http://www.guideline.gov)

## Rating Scheme for the Strength of the Recommendations

### Criteria for Recommendation Rating

Statement Rating	Definition	Implication for Practice
Strong	A Strong recommendation means that the workgroup believes that the benefits of the recommended approach clearly exceed the harms (or that the harms clearly exceed the benefits in the case of a strong negative recommendation), and that the quality of the supporting evidence is excellent/good (grade I or II). <sup>*</sup> In some clearly identified circumstances, strong recommendations may be made based on lesser evidence when high-quality evidence is impossible to obtain and the anticipated benefits strongly outweigh the harms.	Practitioners should follow a Strong recommendation unless a clear and compelling rationale for an alternative approach is present.
Fair	A Fair recommendation means that the workgroup believes that the benefits exceed the harms (or that the harms clearly exceed the benefits in the case of a negative recommendation), but the quality of evidence is not as strong (grade II or III). <sup>*</sup> In some clearly identified circumstances, recommendations may be made based on lesser evidence when high-quality evidence is impossible to obtain and the anticipated benefits outweigh the harms.	Practitioners should generally follow a Fair recommendation but remain alert to new information and be sensitive to patient preferences.
Weak	A Weak recommendation means that the quality of evidence that exists is suspect or that well-done studies (grade I, II, or III) <sup>*</sup> show little clear advantage to one approach versus another.	Practitioners should be cautious in deciding whether to follow a recommendation classified as Weak, and should exercise judgment and be alert to emerging publications that report evidence. Patient preference should have a substantial influencing role.
Consensus	A Consensus recommendation means that Expert opinion (grade IV) supports the guideline recommendation even though the available scientific evidence did not present consistent results, or controlled trials were lacking.	Practitioners should be flexible in deciding whether to follow a recommendation classified as Consensus, although they may set boundaries on alternatives. Patient preference should have a substantial influencing role.
Insufficient Evidence	An Insufficient Evidence recommendation means that there is both a lack of pertinent evidence (grade V) <sup>*</sup> and/or an unclear balance between benefits and harms.	Practitioners should feel little constraint in deciding whether to follow a recommendation labeled as Insufficient Evidence and should exercise judgment and be alert to emerging publications that report evidence that clarifies the balance of benefit versus harm. Patient preference should have a substantial influencing role.

<sup>\*</sup>Conclusion statements are assigned a grade based on the strength of the evidence. Grade I is good; grade II, fair; grade III, limited; grade IV signifies expert opinion only and grade V indicates that a grade is not assignable because there is no evidence to support or refute the conclusion.

The evidence and these grades are considered when assigning a rating (Strong, Fair, Weak, Consensus, Insufficient Evidence - see chart above) to a recommendation.

Adapted by the Academy of Nutrition and Dietetics (AND) from the American Academy of Pediatrics, Classifying Recommendations for Clinical Practice Guideline, Pediatrics. 2004;114:874-877. Revised by the AND Evidence-Based Practice Committee, Feb 2006.

## Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

## Method of Guideline Validation

External Peer Review

Internal Peer Review

## Description of Method of Guideline Validation

Each guideline is reviewed internally and externally using the AGREE (Appraisal of Guidelines for Research and Evaluation) Instrument as the evaluation tool. The external reviewers consist of an interdisciplinary group of individuals (may include dietitians, doctors, psychologists, nurses, etc.). The guideline is adjusted by consensus of the expert panel and approved by Academy's Evidence-Based Practice Committee prior to publication on the Evidence Analysis Library (EAL).

## Evidence Supporting the Recommendations

### Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

The guideline contains conclusion statements that are supported by evidence summaries and evidence worksheets. These resources summarize the important studies (randomized controlled trials [RCTs], clinical trials, observational studies, cohort and case-control studies) pertaining to the conclusion statement and provide the study details.

## Benefits/Harms of Implementing the Guideline Recommendations

### Potential Benefits

- A primary goal of implementing these recommendations includes improving a person's ability to achieve optimal nutrition through healthful plant-based food choices and a physically active lifestyle.
- Although costs of medical nutrition therapy (MNT) sessions and reimbursement vary, MNT is essential for improved outcomes. MNT education can be considered cost effective when considering the benefits of nutrition interventions on the onset and progression of comorbidities versus the cost of the intervention.

### Potential Harms

Overall Risk/Harm Considerations

Safety issues must be reviewed carefully for each individual. General benefits and risks associated with implementation of the guideline are addressed for each recommendation.

### *Calcium Supplements*

Some individuals who take calcium supplements, particularly calcium carbonate, might experience gastrointestinal side effects including gas, bloating, and/or constipation. To alleviate these symptoms, consideration for another form of calcium may be warranted, as well as spreading out the calcium dose throughout the day and/or taking the supplement with meals.

### *Vitamin B-12 Intake in Pregnant Adolescent and Adult Vegetarians*

Care should be taken that pregnant patient or client intake from all sources is not above the tolerable upper intake level (UL). Supplementation is only encouraged after assessment of dietary intake and supplementation intake.

In addition to the above, a variety of barriers may hinder the application of these recommendations:

- A vegetarian dietary pattern encompasses wide variations in foods eaten and complexity regarding dietary practices, beliefs and motivations. The registered dietitian (RD) should maintain flexibility and acceptance to support the lifestyle choices in working with this population. (See the Guideline Overview in the original guideline document for a more detailed explanation of the complexity of vegetarian dietary patterns).
- In some cases, there may be increased cost associated with the selective use of vitamin and mineral supplements
- Accessibility and costs of biochemical parameter testing should be considered.

## Contraindications

### Contraindications

Since the optimal ratio of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are not known for vegetarians, very high levels of EPA and DHA may be contraindicated, and thus, over-supplementation should be avoided. The US Food and Drug Administration advises that consumption of more than three grams of omega-3 fatty acids per day may cause gastrointestinal symptoms.

## Qualifying Statements

### Qualifying Statements

- While the evidence-based nutrition practice guideline represents a statement of best practice based on the latest available evidence at the time of publication, the guideline is not intended to overrule professional judgment. Rather, it may be viewed as a relative constraint on individual clinician discretion in a particular clinical circumstance. The independent skill and judgment of the health care provider must always dictate treatment decisions. These nutrition practice guidelines are provided with the express understanding that they do not establish or specify particular standards of care, whether legal, medical or other.
- This nutrition practice guideline is meant to serve as a general framework for handling clients with particular health problems. It may not always be appropriate to use these nutrition practice guidelines to manage clients because individual circumstances may vary. For example, different treatments may be appropriate for clients who are severely ill or who have co-morbid, socioeconomic, or other complicating conditions. The independent skill and judgment of the health care provider must always dictate treatment decisions.

## Implementation of the Guideline

### Description of Implementation Strategy

This publication of this guideline is an integral part of the plans for getting the Academy of Nutrition and Dietetics medical nutrition therapy (MNT) evidence-based recommendations for vegetarian nutrition to all dietetics practitioners engaged in, teaching about or researching the topic. National implementation workshops at various sites around the country and during the Academy's Food Nutrition Conference Expo (FNCE) are planned. Additionally, there are recommended dissemination and adoption strategies for local use.

The guideline development team recommended multi-faceted strategies to disseminate the guideline and encourage its implementation. Management support and learning through social influence are likely to be effective in implementing guidelines in dietetic practice. However, additional interventions may be needed to achieve real change in practice routines.

Implementation of the guideline will be achieved by announcement at professional events, presentations and training. Some strategies include:

- National and Local Events – State dietetic association meetings and media coverage will help launch the guideline
- Local Feedback Adaptation – Presentation by members of the work group at peer review meetings and opportunities for continuing professional education unites (CEUs) for courses completed
- Education Initiatives – The guideline and supplementary resources will be freely available for use in the education and training of dietetic interns and students in approved Commission on Accreditation of Dietetics Education (CADE) programs
- Champions – Local champions will be identified and expert members of the guideline team will prepare articles for publications. Resources will be provided that include PowerPoint presentations, full guidelines and pre-prepared case studies.
- Practical Tools – Some of the tools that will be developed to help implement the guideline include specially designed resources, such as clinical algorithms, slide presentations, training and toolkits.

Specific distribution strategies include:

*Publication in full:* The guideline is available electronically at the Academy Evidence Analysis Library website ([www.adaevidencelibrary.com](http://www.adaevidencelibrary.com) ) and announced to all Academy Dietetic Practice Groups. The Academy Evidence Analysis Library will also provide downloadable supporting information and links to relevant position papers.

## Implementation Tools

Clinical Algorithm

Patient Resources

Quick Reference Guides/Physician Guides

Resources

Slide Presentation

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

## Institute of Medicine (IOM) National Healthcare Quality Report Categories

### IOM Care Need

Getting Better

Staying Healthy

### IOM Domain

Effectiveness

Patient-centeredness

## Identifying Information and Availability

## Bibliographic Source(s)

Academy of Nutrition and Dietetics. Vegetarian nutrition (VN) evidence based nutrition guideline. Chicago (IL): Academy of Nutrition and Dietetics; 2011 Sep. Various p.

## Adaptation

Not applicable: The guideline was not adapted from another source.

## Date Released

2011 Sep

## Guideline Developer(s)

Academy of Nutrition and Dietetics - Professional Association

## Source(s) of Funding

Academy of Nutrition and Dietetics

## Guideline Committee

The Vegetarian Nutrition Workgroup

## Composition of Group That Authored the Guideline

*Workgroup Members:* Sudha Raj, PhD, RD (*Chair*); Amy Knoblock-Hahn, RD, LD; Diana K. Cullum-Dugan, RD, LD; Debbie Lucas, MS, RD, CDE; Kimberly J. Thedford, MS, RD, LD; Roman M. Pawlak, PhD, RD

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In the interest of full disclosure, the Academy has adopted the policy of revealing relationships workgroup members have with companies that sell products or services that are relevant to this guideline topic. Workgroup members are required to disclose potential conflicts of interest by completing the Academy Conflict of Interest Form. It should not be assumed that these financial interests will have an adverse impact on the content of the guideline, but they are noted here to fully inform readers.

None of the workgroup members disclosed potential conflicts of interest.

## Guideline Status

This is the current release of the guideline.

## Guideline Availability

Electronic copies: Available to members from the [Academy of Nutrition and Dietetics Web site](#) .

## Availability of Companion Documents

The following are available:

- Academy of Nutrition and Dietetics vegetarian nutrition evidence-based nutrition practice guideline. Executive summary of recommendations. 2011. Chicago (IL): Academy of Nutrition and dietetics. Electronic copies: Available from the [Academy of Nutrition and Dietetics Web site](#) .
- Academy of Nutrition and Dietetics vegetarian nutrition evidence-based nutrition practice guideline presentation. Slide set. 2011. 67 p. Chicago (IL): American Dietetic Association. Electronic copies: Available for purchase from the [Academy of Nutrition and Dietetics Web site](#) .

In addition, various resources for estimating and testing resting metabolic rate are available in the appendices to the original guideline document.

## Patient Resources

Patient/client instructions for measuring resting metabolism are available in the appendices to the original guideline document.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

## NGC Status

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